

**WHAT IS CLAIMED IS:**

1                   1.    Process for mounting an outer ring of a bearing in a recess of a  
2    machine part, the outer ring having an inner peripheral surface with a raceway for  
3    rolling rollers or with a bearing surface and an outer peripheral surface, the  
4    process comprising:

5                    pressing a stamp having a shape into the outer ring to deform the outer  
6    ring in such a way that the inner peripheral surface of the outer ring pressing  
7    against the stamp assumes the shape of the stamp;

8                    pressing the outer ring into a machine part through use of the stamp so  
9    that a contour of the outer peripheral surface of the outer ring is plastically molded  
10   into the machine part through axial flow forming of the machine part and with the  
11   outer ring serving as a stretching tool; and

12                  removing the stamp from the outer ring.

1                   2.    The process according to Claim 1, wherein the inner peripheral  
2    surface of the outer ring substantially maintains a shape formed with the stamp  
3    after the stamp is removed.

1                   3.    The process according to Claim 1, wherein the outer ring has a  
2    greater hardness than the machine part.

1                   4.    The process according to Claim 1, wherein the stamp is pressed  
2   into the outer ring with a first overlap.

1                   5.    The process according to Claim 4, wherein the outer ring is  
2   elastically deformed as the stamp is press fitted into the outer ring.

1                   6.    The process according to Claim 4, wherein the outer ring is  
2   pressed into the machine part with a second overlap which is at least 100  $\mu\text{m}$ .

1                   7.    The process according to Claim 4, wherein the outer ring is  
2   pressed into the machine part with a second overlap which corresponds to a  
3   maximum wall thickness eccentricity of the outer ring after the stamp has been  
4   press fit into the outer ring, plus at least 50  $\mu\text{m}$ .

1                   8.    The process according to Claim 1, wherein the machine part is  
2   pressed into a cylindrical bore of a matrix before the outer ring is press fitted into  
3   the machine part.

1                   9.    An outer ring for use in the process according to Claim 1,  
2   wherein the outer ring has a greater hardness than the machine part.

FOE080" 22902550

1           10. The outer ring according to Claim 9, wherein the outer ring has a  
2 larger external diameter in an axial section of its outer peripheral surface than the  
3 external diameter of its outer peripheral surface at at least one of its end faces.

1           11. The outer ring according to Claim 10, wherein a transition from  
2 the larger external diameter of the outer peripheral surface of the outer ring to the  
3 external diameter at the end face extends continuously in at least one section.

1           12. The outer ring according to Claim 11, wherein the transition  
2 includes a conical surface along one axially extending section and a convex surface  
3 along a another axially extending section.

1           13. Process for mounting an inner ring of a bearing on a machine  
2 part, the inner ring having an outer peripheral surface with a raceway for rolling  
3 rollers or with a bearing surface, and an inner peripheral surface, the process  
4 comprising:

5           pressing a stamp having a bore which possesses a shape onto the inner  
6 ring to deform the inner ring in such a way that the outer peripheral surface of the  
7 inner ring pressing against the stamp assumes the shape of the bore of the stamp;

8           pressing the inner ring onto a machine part through use of the stamp so  
9 that a contour of the inner peripheral surface of the inner ring is plastically molded

09920622-090301  
T0E030-2290260

10 into the machine part through axial flow forming of the machine part with the  
11 inner ring serving as a stretching tool; and  
12 removing the stamp from the inner ring.

1 14. The process according to Claim 13, wherein the inner ring has a  
2 greater hardness than the machine part.

1 15. The process according to Claim 13, wherein the outer peripheral  
2 surface of the inner ring substantially retains the shape formed with the stamp  
3 after the stamp is removed.

1 16. The process according to Claim 13, wherein the stamp is pressed  
2 onto the inner ring with a first overlap.

1 17. The process according to Claim 16, wherein the inner ring is  
2 elastically deformed as the stamp is pressed on.

1 18. The process according to Claim 17, wherein the inner ring is  
2 pressed onto the machine part with a second overlap which is at least 100  $\mu\text{m}$ .

1 19. The process according to Claim 17, wherein the inner ring is  
2 pressed onto the machine part with a second overlap which corresponds to a

3 maximum wall thickness eccentricity of the inner ring after the stamp has been  
4 press fit plus at least 50  $\mu\text{m}$ .

1 20. An inner ring for use in the process according to Claim 13,  
2 wherein the inner ring has a greater hardness than the machine part.

1 21. The inner ring according to Claim 20, wherein the inner ring has  
2 and end face, the inner ring having a smaller internal diameter in an axial section  
3 of its inner peripheral surface than the internal diameter of at least the end face.

1 22. The inner ring according to Claim 21, wherein a transition from  
2 the smaller internal diameter of the inner peripheral surface to the internal  
3 diameter of the end face extends continuously along at least one section.

1 23. The inner ring according to Claim 22, wherein the transition  
2 includes a conical surface along one axially extending section and a convex surface  
3 along a another axially extending section.